II. CLAIM AMENDMENTS

·1.(cancelled)

2. (currently amended) The method according to ~~claim 1~~ claim 17, **wherein** in the method a target value is determined to the packet error rate, that the packet error rate is aimed to be kept substantially the same as the target value, and that the difference between the packet error rate and the target value is also used as a variable in the method.

3. (original) The method according to claim 2, **wherein** for performing fuzzy control a first set of control values is formed, in which the packet error rate is used as a variable, a second set of control values is formed, in which the change rate of the packet error rate is used as a variable, and a set of fuzzy rules is arranged, which are used for determining the effect of the control values to the modulation mode used as a controllable value.

4. (original) The method according to claim 3, **wherein** said control value sets are formed of the values: positive large, positive medium, positive small, negligible, not small, not medium, and not large.

5. (original) The method according to claim 4, **wherein** said set of fuzzy rules is determined on the basis of the following table:

2

PERdt \ PER	NL	NM	NS	Z	PS	PM	PL
NL	P_6	P_5	P_4	P_3	P_2	P_1	N
NM	P_5	P_4	P_3	P_2	P_1	N	N_1
NS	P_4	P_3	P_2	P_1	N	N_1	N_2
Z	P_3	P_2	P_1	N	N_1	N_2	N_3
PS	P_2	P_1	N	N_1	N_2	N_3	N_4
PM	P_1	N	N_1	N_2	N_3	N_4	N_5
PL	N	N_1	N_2	N_3	N_4	N_5	N_6

6. (original) The method according to claim 5, **wherein** said first set of control values comprised the following values:

PER	NL	NM	NS	Z	PS	PM	PL
μ=1	0.07	0.08	0.09	0.10	0.11	0.12	0.13

that said second set of control values comprises the following values:

PERdt	NL	NM	NS	Z	PS	PM	PL
μ=1	-0.006	-0.004	-0.002	0	0.002	0.004	0.006

and that said set of fuzzy controls comprises the following values:

N_6	N_5	N_4	N_3	N_2	N_1	N	P_1	P_2	P_3	P_4	P_5	P_6
-1.2	-1.0	-0.8	-0.6	-0.4	-0.2	0	0.2	0.4	0.6	0.8	1.0	1.2

7. (original) The method according to claim 6, **wherein** in the method a set of modulation modes is defined, wherein for each modulation mode an individualizing index is

3

defined, and in the method at least the following steps are taken:

- an initialisation phase, wherein one of said indexes is selected in order to select the modulation mode used in the communication connection,

- a computing phase, in which the difference of the packet error rate from the target value, and the change rate of the packet error rate are calculated, and

- a fuzzy control phase, in which fuzzy control is used for defining the index change of the modulation mode, wherein the modulation mode according to the calculated new index is selected for the communication connection.

8. (original) The method according to claim 7, **wherein** said calculating phase and the fuzzy control phase are repeated.

9. (currently amended) The method according to ~~claim 1~~ claim 17, **wherein** the transmission power is also controlled in the method.

10. (original) The method according to claim 9, **wherein** in the method the modulation mode is adjusted until a such modulation mode is obtained, by which the packet error rate (PER) is substantially the same as said target value of the packet error rate, whereafter the transmission power is adjusted by using fuzzy control.

11. (original) The method according to claim 9, **wherein** the modulation method and the transmission power are selected substantially simultaneously.

4

12. (currently amended) A communication system, comprising means for arranging two communication devices to communicate with each other in order to transfer packet-form information at least partly wirelessly, means for determining a packet error rate, and means for selecting ~~for the connection~~ a modulation mode for the connection | from at least two modulation modes, **wherein** the communication system comprises means for using fuzzy control in the selection of the modulation mode, and that at least one variable arranged to be used in fuzzy control is the packet error rate.

13. (original) The communication system according to claim 12, **wherein** a target value is defined for the packet error rate, that the means for the link adaptation comprise means for adjusting the packet error rate to substantially the same as said target value, and that the difference between the packet error rate and the result value is additionally arranged to be used as a fuzzy control variable.

14. (original) The communication system according to claim 13, **wherein** for performing fuzzy control a first set of control values is formed, in which the packet error rate has been used as a variable, and a second set of control values, in which the change rate of the packet error rate has been used as a variable, and that a set of fuzzy rules has been formed for defining the influence of the control values of said variables to the modulation mode used as a controllable value.

15. (currently amended) An access point controller comprising means for arranging the access point controller

5

and at least one wireless terminal to communicate with each
other in order to transmit packet-form information at least
partly in a wireless manner, means for defining the packet
error rate, and means for selecting ~~for the connection~~ a
modulation mode <u>for the connection</u> from at least two
modulation modes, **wherein** the access point controller
comprises means for using fuzzy control in the selection of
the modulation mode, and that in fuzzy control at least one
variable that is arranged to be used is said defined packet
error rate.

16. (currently amended) A wireless terminal, comprising
means for transmitting packet-form information at least
partly wirelessly in a communication connection arranged
between the wireless terminal and a second communication
device, means for defining the packet error rate, and means
for selecting ~~for the connection~~ a modulation mode <u>for the</u>
<u>connection</u> from at least two modulation modes, **wherein** the
wireless terminal comprises means for using fuzzy control
in the selection of the modulation mode, and that in fuzzy
control at least one variable that is arranged to be used
is said defined packet error rate.

17. (new) A method for performing link adaptation in a
communication system, the method comprising

    forming a connection to transfer information at
least partly wirelessly between two communication
devices;

    forming packets from the information to be
transferred via the connection;

6

determining a packet error rate; and

selecting a modulation mode for the connection from at least two different modulation modes;

wherein said selecting a modulation mode comprises using fuzzy control; and using said packet error rate as one variable for said fuzzy control.

7